

What is claimed is:

1. A fluid transfer system comprising:
  - a rotatable housing defining at least a part of a boundary of a first chamber;
  - 5 a fluid-drive element attached to the rotatable housing; and
  - a conduit for transferring fluids,

wherein the fluid-drive element is configured to force fluid through the conduit when the rotatable housing rotates.
- 10 2. A fluid transfer system according to claim 1, wherein the rotatable housing includes a shaft, and the fluid-drive element is attached to the shaft of the rotatable housing.
3. A fluid transfer system according to claim 1, wherein the rotatable housing is a portion of a liquid ring pump.
- 15 4. A fluid transfer system according to claim 1 further comprising a second chamber for containing fluid, wherein the first chamber is nested in the second chamber.
5. A fluid transfer system according to claim 4, wherein the fluid-drive element is an impeller of a centrifugal pump, the impeller located outside the first chamber.
- 20 6. A fluid transfer system according to claim 4, wherein the fluid-drive element is located outside the first chamber, and the conduit is a pitot tube attached to a stationary boundary of the second chamber.
- 25 7. A fluid transfer system according to claim 6, wherein the pitot tube is routed through a hollow portion of a shaft that is included in the rotatable housing.
8. A fluid transfer system comprising:
  - a rotatable housing defining at least a part of a boundary of a first chamber; and
  - 30 a pitot tube for transferring fluids, the pitot tube configured such that fluid is driven

into the pitot tube when the rotatable housing rotates.

9. A fluid transfer system according to claim 8, wherein the pitot tube is attached to the rotatable housing.

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10. A fluid transfer system according to claim 8, wherein the pitot tube is detached from the rotatable housing.

11. A fluid transfer system according to claim 10 further comprising a partially enclosed track attached to the rotatable housing for holding fluid,  
10 wherein the pitot tube is configured to transfer fluid from the partially enclosed track when the rotatable housing rotates.

12. A fluid transfer system according to claim 8, wherein the rotatable housing is a  
15 portion of a liquid ring pump.

13. A fluid transfer system according to claim 8 further comprising a second chamber capable of holding fluid, wherein the first chamber is nested in the second chamber, and the pitot tube connects the first chamber and the second chamber.

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14. A fluid transfer system comprising:  
a rotatable housing defining at least a part of a boundary of a first chamber;  
a second chamber capable of holding fluid, the first chamber being nested in the second chamber; and  
25 a conduit connecting the first chamber and the second chamber,  
wherein the conduit is configured such that fluid is driven through the conduit when a pressure difference exists between the first chamber and the second chamber.

15. A fluid transfer system according to claim 14, wherein the rotatable housing is a  
30 portion of a liquid ring pump.

16. A fluid transfer system according to claim 14, wherein fluid is driven from the second chamber to the first chamber when pressure in the second chamber is higher than pressure in the first chamber.
- 5    17. A fluid transfer system comprising:  
      a rotatable housing defining at least a part of a boundary of a first chamber capable of holding fluid;  
      a second chamber capable of holding fluid, the first chamber nested in the second chamber;
- 10    a conduit for transferring fluid between the first chamber and second chamber; and  
      a baffle attached to a stationary boundary of the second chamber, the baffle configured to keep an opening of a conduit submerged in fluid in the second chamber when the rotating housing rotates.
- 15    18. A fluid transfer system according to claim 17, wherein the rotatable housing is a portion of a liquid ring pump.
19. A fluid transfer system according to claim 17 further comprising a pump configured to drive fluid through the conduit between the first chamber and the second chamber.
- 20    20. A method of transferring fluid between two containers comprising the steps of:  
      providing a conduit to connect a first container and a second container, each container holding fluid; and  
      rotating at least part of a boundary of the first container to drive fluid into the conduit  
25    to transfer fluid between the first container and the second container.
21. A method of transferring fluid between a liquid ring pump and a fluid reservoir comprising the steps of:  
      providing a liquid ring pump with a rotatable housing;  
30    providing a conduit to connect the liquid ring pump with a fluid reservoir; and  
      rotating the rotatable housing to drive fluid into the conduit to transfer fluid between

the liquid ring pump and the fluid reservoir.

22. A fluid transfer system comprising:

a rotatable housing defining at least a part of a boundary of a first chamber;

5        a second chamber capable of holding fluid, the first chamber being nested in the second chamber; and

      a conduit connecting the first chamber and the second chamber,

      wherein the conduit is configured such that fluid is driven through the conduit by a pump.

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